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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/572,404	03/16/2006	Ryuuichi Higuchi	TOYA108.013APC	8010

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EXAMINER	
BLAND, LAYLA D	

ART UNIT	PAPER NUMBER
1623	

NOTIFICATION DATE	DELIVERY MODE
02/15/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/572,404	HIGUCHI ET AL.	
	Examiner	Art Unit	
	Layla Bland	1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *See Continuation Sheet*.
4) ☒ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/16/2006, 5/22/2006, 5/25/2006, 5/30/2006, 12/26/2006, 4/12/2007, 12/12/2007.

DETAILED ACTION

Priority

This application is a national stage entry of International Application No. PCT/JP05/06021, filed March 30, 2005 and claims foreign priority to Japanese Application No. 2004-283549, filed on September 29, 2004 under 35 U.S.C. 119(a)-(d). The copy of certified copy of the priority has not been filed with the instant Application.

Claims 1-19 are pending in this application and are examined on the merits herein.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-18 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are drawn to drugs, food or drink, or pharmaceutical compositions comprising compounds of general formula (1). Compounds of formula (1) are natural products found in, for example, plants in the genus *Aloe* and the claims do not require any physical transformation of the compounds.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
>
> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-7 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-7 recite the limitation "a drug." The specification does not define "drug." It is noted that "drug" is claimed separately from "food or drink" (claims 8-15) and "pharmaceutical preparation" (claims 16 and 17). It is unclear what is meant to be included or excluded as a drug. For the purposes of examination, "drug" is interpreted to mean any composition which can provide any therapeutic effect.

Claim 19 recites the limitation "0.001 to 10% by dry mass or more of the compound." It is unclear whether the amount of the compound should be between 0.001 to 10% of the total or if the amount of the compound should be more than that.

Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compositions and methods comprising compounds wherein R4 is –OH or =O, does not reasonably provide enablement for compositions and methods comprising compounds wherein R4 is other than –OH or =O. The specification does not enable any person skilled in the art to which it pertains, or

with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

The factors to be considered in determining whether a disclosure meets the enablement requirements of 35 U.S.C. 112, first paragraph, have been described in *In re Wands*, 858 F.2d 731, 8 USPQ2d 1400 (Fed. Cir., 1988). The court in Wands states, "Enablement is not precluded by the necessity for some experimentation, such as routine screening. However, experimentation needed to practice the invention must not be undue experimentation. The key word is 'undue', not 'experimentation'" (*Wands*, 8 USPQ2sd 1404). Clearly, enablement of a claimed invention cannot be predicated on the basis of quantity of experimentation required to make or use the invention. "Whether undue experimentation is needed is not a single, simple factual determination, but rather is a conclusion reached by weighing many factual considerations" (*Wands*, 8 USPQ2d 1404). Among these factors are: (1) the nature of the invention; (2) the breadth of the claims; (3) the state of the prior art; (4) the predictability or unpredictability of the art; (5) the relative skill of those in the art; (6) the amount of direction or guidance presented; (7) the presence or absence of working examples; and (8) the quantity of experimentation necessary.

While all of these factors are considered, a sufficient amount for a *prima facie* case is discussed below.

(1) The nature of the invention and (2) the breadth of the claims:

The claims are drawn to compositions for improving hyperglycemia and methods for improving hyperglycemia comprising compounds of formula (1). Thus, the claims

taken together with the specification imply that administration of any compound of formula (1) is effective for improving hyperglycemia.

(3) The state of the prior art and (4) the predictability or unpredictability of the art:

Compounds of formula (1) wherein R4 is -OH or =O are natural products and are known to have a hypoglycemic effect, as taught by Abou Zeid (Egypt. J. Pharm. Sci., 39, No. 4-6, pp. 379-398 (1998), PTO-1449 submitted March 16, 2006) [page 379, third paragraph and page 392, Figure]. As seen in the figure, all the triterpenes isolated contained a free -OH group or =O group. The skilled artisan would question whether modifications to the only polar functional group present in these natural products would result in a compound having similar activity.

(6) The amount of direction or guidance presented and (7) the presence or absence of working examples:

The specification has provided guidance and working examples for the isolation/preparation and use of compounds of formula (1) wherein R4 is –OH or =O as hypoglycemic agents.

However, the specification does not provide guidance or working examples for the preparation or hypoglycemic activity of compounds wherein R4 is other than -OH or =O.

(8) The quantity of experimentation necessary:

Considering the state of the art as discussed by the references above, particularly with regards to the structure of known natural products and the high unpredictability in the art as evidenced therein, and the lack of guidance provided in the

specification, one of ordinary skill in the art would be burdened with undue experimentation to practice the invention commensurate in the scope of the claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-10, 15, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yongchaiyudha et al. (Phytomedicine Vol. 3 (3), pp. 241-243, 1996, PTO-1449 submitted May 22, 2006) as evidenced by Tanaka et al. (Biol. Pharm. Bull. 29(7) 1418-1422 (2006)).

Yongchaiyudha et al. teach that oral administration of one tablespoonful of *Aloe vera* juice twice a day in patients with diabetes resulted in lower blood sugar levels [see abstract]. Aloe gel also produced antihyperglycemic activity in rats which were given one tablespoon twice a day for at least a week [page 241, Introduction]. Various studies of administration of aloe gel up to 20g/kg showed no toxicity [page 241, second column, first paragraph]. For the preparation of *Aloe vera* juice, aloe juice was squeezed from aloe gel and combined with flavors, preservatives, and sweetening agent [page 242, Sample].

Tanaka et al. teach that the following compounds [page 1420, Figure 4] were isolated from Aloe vera gel [see abstract]:

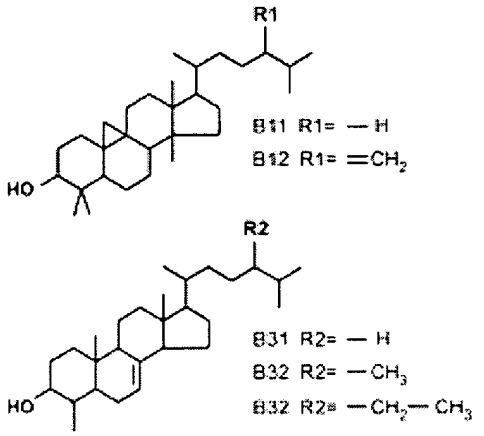
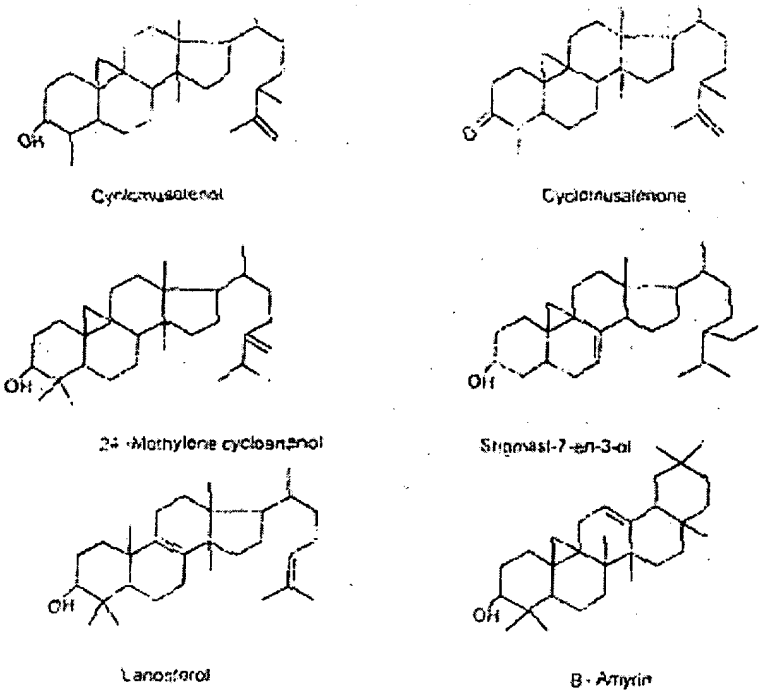


Fig. 4. Chemical Structures of Compounds B11, B12, B31, B32, and B33

These compounds are inherently present in *Aloe vera* gel. Aloe vera gel and/or juice is considered a drug, because it has a therapeutic effect; is a food or drink; and is also a pharmaceutical preparation. Thus, claims 1-3, 8-10, 16, and 18 are anticipated. Written material such as an indication that the composition is to be used for improvement of hyperglycemia is not considered to be within the statutory classes and does not carrry patentable weight. See MPEP 706.03(a). Thus, claim 15 is also anticipated.

Claims 1-3, 8-10, 15, 16, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Abou Zeid (Egypt. J. Pharm. Sci. 39, No. 4-6, pp. 379-398 (1998), PTO-1449 submitted March 16, 2006).

Abou Zeid teaches that the following compounds [page 392, Figure] have hypoglycemic activity [page 380, third paragraph and page 393, Table 5].



A daily oral dose of 30 mg/rat, dissolved in 1% aqueous Tween-80, was administered to rats for seven days [page 385, III and page 393, Table 5]. Tween-80 is a liquid that is often used in foods. Thus, the composition administered to the rats is considered a drug, a food/drink, and a pharmaceutical preparation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-7, 11-14, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yongchaiyudha et al. (Phytomedicine Vol. 3 (3), pp. 241-243, 1996, PTO-1449 submitted May 22, 2006) as evidenced by Tanaka et al. (Biol. Pharm. Bull. 29(7) 1418-1422 (2006)).

Yongchaiyudha et al. teaches as set forth above.

Yongchaiyudha et al. does not teach the concentration compounds contained within the aloe vera gel or juice.

The claims are drawn to compositions which comprise 0.001-10%, or 0.0001 to 1%, by dry mass, of compound of formula (1), and to administration of such a composition. Although Yongchaiyudha et al. do not expressly teach this, it is likely that the compositions taught by Yongchaiyudha et al., whether extract, gel, or juice, would naturally contain this concentration. Furthermore, it is considered within the skill of the skilled artisan to vary the concentration of aloe vera composition, especially in view of the guidance given by Yongchaiyudha et al.

Claims 4, 5, 11, 12, 17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abou Zeid (Egypt. J. Pharm. Sci. 39, No. 4-6, pp. 379-398 (1998), PTO-1449 submitted March 16, 2006).

Abou Zeid teaches as set forth above.

Abou Zeid does not teach the concentration of compounds which were administered to rats in a Tween-80 solution.

The claims are drawn to compositions which comprise 0.001-10%, or 0.0001 to 1%, by dry mass, of compound of formula (1), and to administration of such a composition. Although Abou Zeid does not expressly teach this, it is likely that the composition taught by Abou Zeid did contain this concentration. Furthermore, it is well within the skill of the skilled artisan to vary the concentration, using the teachings of Abou Zeid as guidance.

Claims 6, 7, 13, and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abou Zeid as applied to claims 4, 5, 11, 12, 17, and 19 above, and further in view of Yongchaiyudha et al. (Phytomedicine Vol. 3 (3), pp. 241-243, 1996, PTO-1449 submitted May 22, 2006).

Abou Zeid teaches as set forth above.

Abou Zeid does not teach a composition comprising a plant extract of the family *Graminaea* or *Liliaceae,* or particularly Aloe vera.

Yongchaiyudha et al. teach that aloe vera extracts or gel have antihyperglycemic activity [page 241, Introduction].

It would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare a composition compirisng a compound of formula (1) and an aloe vera extract. The prior art teaches that both of these have antihyperglycemic activity, so the skilled artisan could easily conceive of combining these and could predict that the resulting composition would also have antihyperglycemic activity.

A reference is good not only for what it teaches by direct anticipation but also for what one of ordinary skill in the art might reasonably infer from the teachings. (*In re Opprecht* 12 USPQ 2d 1235, 1236 (Fed Cir. 1989); *In re Bode* 193 USPQ 12 (CCPA) 1976). In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a). From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-17 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-19 of copending Application No. 11/577,301. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims in each application are drawn to compositions comprising the same genus of compounds. The intended use of the compositions is not the same in each application, but intended use is given no patentable weight. Thus, claims 1-17 are anticipated by the claims of copending Application No. 11/577,301.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Layla Bland whose telephone number is (571) 272-9572. The examiner can normally be reached on M-F 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anna Jiang can be reached on (571) 272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Layla Bland
Patent Examiner
Art Unit 1623
January 23, 2008

Shaojia Anna Jiang

1/25/08

Supervisory Patent Examiner
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